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COVER STORY

HACCP Compliant Kitchens

By Laura Doty

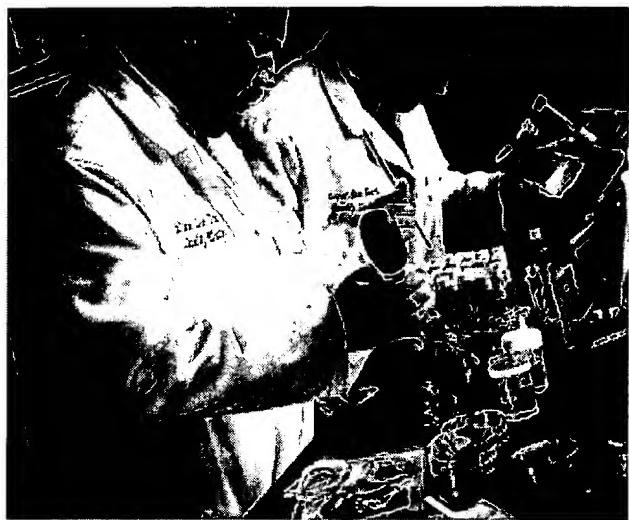
Around the country, restaurateurs and foodservice operators are turning to high-tech temperature recording tools, cook-chill production systems and rigorous staff training to ensure their foods are prepared and served safely. Here, we take you through the HACCP compliant kitchens operated by Legal Sea Foods, Long Beach Unified School District and Cleveland's Metro Medical Center to look close-up at how these progressive food providers are keeping their products free from contamination.

Boston-based Legal Sea Foods Inc., a growing chain with 19 locations and seven more slated to open this year, also operates its own fish processing plant and quality control lab, currently located in Allston, Mass. "If it isn't fresh, it isn't Legal," has been the reassuring motto offered to this chain's patrons for over three decades, and officials and staff at the restaurants are certainly not newcomers to the application of HACCP principles in their operations, either. In 1990, the New England Fisheries Development Association asked Legal to join a U.S. government pilot HACCP program for seafood processing; in 1993, the company participated in a similar pilot program for restaurant operations. In 1994, Legal enrolled in the National Marine Fisheries Service's voluntary HACCP program; this participation allowed the company to earn Grade A ratings for fish packed at its two Boston-area fish markets.

"Having our own certified HACCP plant helps to ensure that all deliveries of fish and seafood arrive in proper condition," said Stephen Martinello,

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HACCP Compliant Kitchens Quality control engineers test products at Legal Sea Foods' Allston, Mass., processing plant. Legal's plant will move to new facilities on Boston's North Point Jetty in the fall of 2002.

temperature, appearance and package integrity. The company's critical control points then follow food items through each restaurant's kitchen. Product temperatures are checked and recorded in all food storage equipment, including line, reach-in and walk-in coolers, as well as during preparation and cooking. Legal also has cook-chill and reheating critical control points for products that are pre-made, such as soups and chowders that are delivered from Legal's processing plant in Cryovac bags at 36°F. to 40°F. The pasteurized products are placed in pots of boiling water and heated to 165°F. or above, and are held at 140°F. or above until service.

A new HACCP compliant thermometer, recently added in the kitchens of Legal Sea Foods, works with computer technology and a keypad to help staff clearly and easily monitor and record temperatures of food items. All critical control points in each Legal kitchen's HACCP plan are programmed into the computer, along with appropriate temperatures for every item tested. When checking whether fish or other items have remained in safe temperature zones, staff hit appropriate keys on their thermometers' keypads, receive a green light or a red light depending on the temperature recorded, and all data is electronically transmitted and stored in a back-office computer. "The new thermometers we are using in our restaurants may be the most important piece of equipment now in our HACCP program," stated Martinello. "We upgraded our computers so that we could install and use this technology. The biggest downside to a HACCP program in kitchens such as ours was the time-consuming and laborious process of physically recording all the information relating to our HACCP guidelines—the time, date, product and temperature. Now, we can do this automatically, accurately and easily with this new thermometer."

Legal's director of quality control and inspection services. This doesn't mean restaurant employees assume that deliveries need not be checked. Receiving is the first critical control point at the restaurant level, and all food deliveries are checked for

HACCP practices at Legal Sea Foods are backed up by standard operating procedures for sanitation in the restaurants' kitchens, an important aspect of food safety measures in any operation, according to Martinello. Legal's kitchens are designed with separate storage and prep areas for raw seafood and produce to help prevent cross-contamination.

Correct hand-washing procedures, the single-use of gloves by staff handling some food items, and stringent cleaning and sanitizing procedures for work areas and equipment are important policies that Legal management tries to ensure are followed by employees. Hand sinks are located within 20 feet of all prep areas to facilitate frequent hand washing, and a labeled sanitizing bucket is evident at each station. Special rubber mesh mats are used to anchor cutting boards in Legal's kitchens, never wet towels, which Martinello pointed out can be a source of bacterial contamination.



Standard operating procedures in Legal's kitchens, an important backup to HACCP compliance, include separate areas for prepping produce and raw seafood to avoid cross-contamination, as well as a single glove-use policy for employees.

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To aid safe operations further, all employees at Legal Sea Foods are trained in ServSafe® courses, and food safety principles are stressed daily by chefs in the kitchens who go through checklists every morning to make sure work areas have been properly cleaned and set-up according to established sanitary procedures.

Having outgrown its old facility, the Long Beach Unified School District's Nutrition Center in Long Beach, Calif., was relocated to a large former warehouse space in 1994. A \$10 million conversion of the warehouse into a new production center for this large school district was designed to include both workflow patterns and equipment needed to attain HACCP compliance in all phases of its operation. Preparing and shipping 75,000 meals a day to 85 district school sites, the Long Beach District's Nutrition Center is possibly the largest cook-chill facility in North America, according to Laura Bunnell, the center's production manager.

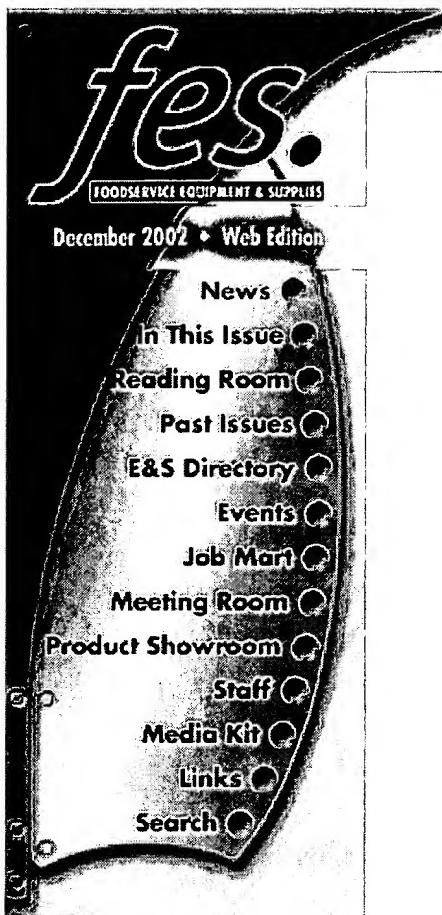
Bunnell said that one of the biggest HACCP challenges in her operation is tracking meat products that are delivered to the facility. Meat products, generally provided by the U.S. government in commodity forms for the national school meals programs, are checked for proper, safe temperatures right off their delivery trucks by the warehouse manager, who uses an infrared thermometer. Products are logged in and then stored in one of three large freezers at the facility. Sub-standard products (including those found to be outside safe holding temperatures) are immediately returned. As food products are required to keep pace with the district's four-week menu cycle, they are moved on racks from freezers into refrigerators and kept at 28°F. to 30°F. to ensure their safety and HACCP compliance. Because of the high volume of products needed for the large-batch menu items prepared in this central kitchen, and the barely above-freezing refrigerator temperatures, it takes two weeks to thaw foods properly in the refrigerators prior to production. Bunnell said that her operation necessarily

runs a perpetual inventory, with all items being carefully logged and tagged with dates received, purchase codes and dates stating when they'll be needed for menu production, thus ensuring proper usage.



Soups and chowders are delivered to restaurant kitchens from Legal's processing plant in Cryovac bags, and temperature-checked before and after reheating. New thermometers offer accurate temperature monitoring as well as automatic documentation and record-keeping.

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The production kitchen at this center has six 200-gallon kettles and two jumbo chillers for cook-chill production of menu items. Even so, "Our goal is to provide as much food prepared from scratch as possible," noted Bunnell. Cook-chill menu items are prepared in 180-gallon batches, packed into one-gallon Cryovac bags and stored for delivery to school sites. "It's a real luxury for us to be able to test our own recipes," said Bunnell, referring to a 700-square-foot test kitchen at the center where new recipes are tried out and refined. "It's fun for us to try to create and 'tweak' recipes into something kids will like while using the government commodities we receive here." Bunnell has laminated all her recipes, as well as entered them into computers used in the facility with indications as to the proper handling of perishable items, so that staff can follow these products according to flow-charts and maintain HACCP controls while preparing the batches of food. "The large-capacity meat dicers we have in our facility also provide a real boon during our production of cook-chill recipes," commented Bunnell. "They allow a uniformity of food chopping for menu items such as turkey tacos or sloppy Joes that means that they can easily be removed through the four and one-half inch openings in the gallon bags that we send to our sites for meal service." To complete the flow of foods from delivery to the center, production and shipping to school sites, products are transported in refrigerated trucks that maintain temperatures of 35°F. to 40°F. Supervisors at each school then check the temperature of delivered menu items with infrared thermometers before accepting them for retherming and service.

Another effective procedure used at this nutrition center that helps keep it in HACCP compliance is the creation of a "baby bag" from every batch



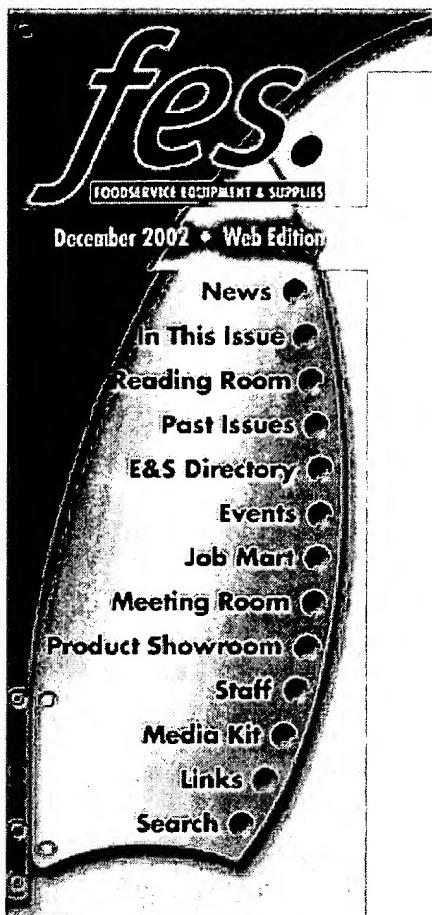
Large-capacity meat dicers are "a boon" to production of cook-chill recipes in the production kitchen at the Long Beach Unified School District's Nutrition Center.

of food created at the facility, according to Bunnell. These baby bags are carefully labeled and kept in storage for two weeks after their "parent" items have been delivered and served at school sites. In case any complaints stem from foods served at Bunnell's schools, the corresponding baby bag can be retrieved and checked for possible

contamination.

The cleaning of the large-scale production equipment used in the nutrition center is a laborious and complex process but, as standard operating procedure, is also carefully monitored for compliance with strict HACCP guidelines. "I provide check-off lists for every step of our vat cleaning process relating to the critical control points. Filled-out lists are turned into me every day by cleaning staff," explained Bunnell. "The utility workers who provide general cleaning of the facility also provide me with their check-off sheets, which I review at least monthly."

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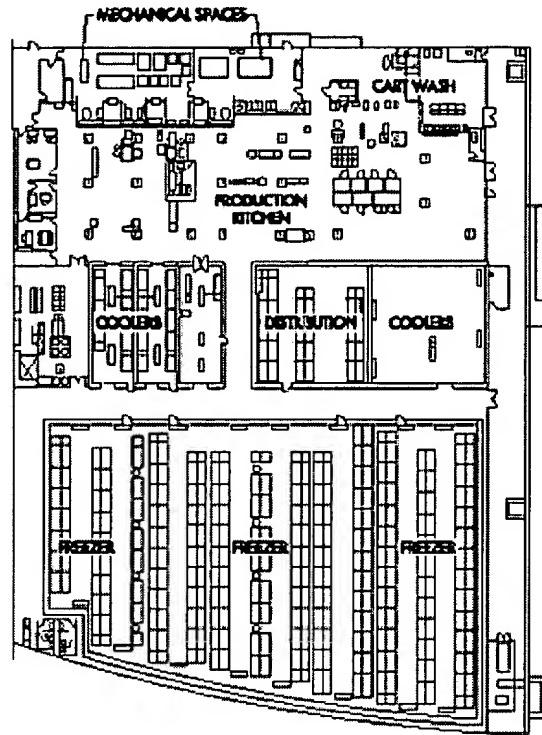
Bunnell joined the staff at the new nutrition center when it opened three years ago with its HACCP compliance goals already established. She then faced the challenge of creating the HACCP work- and product-flow systems that her facility now maintains, a job that took her a full year. She is proud of the fact that all 53 employees at her facility are trained in HACCP compliance and are certified in the ServSafe® program, a commitment in time and money for training that Bunnell believes is extremely important to the successful implementation of HACCP at any central production facility. She and her staff meet monthly to review HACCP performance. The nutrition center also provides training and certification in HACCP compliance for all supervisors at school sites, and recently hosted a two-day, five-hour seminar for supervisors, which is provided twice a year in this school district. "HACCP compliance is of the utmost importance in our operations and we have the commitment of both staff and administration to work towards ongoing improvements in our HACCP programs," Bunnell concluded.

When Metro Medical Center in Cleveland decided in 1996 to renovate its existing central kitchen with the help of consultants Rick Parker and Ron Kooser from Cini-Little International, project partners agreed to approach the project in stages over a multi-year period, according to Todd Foutty, director of dining at Metro.

The first stage in the \$3 million renovation was the installation of new equipment and a changeover in patient meal production to a cook-chill system. Foutty noted that, "Cook-chill is a responsible method of producing food for our decentralized serving areas. The fulfillment of HACCP requirements is simplified by using cook-chill correctly, and can be maintained when a central kitchen is providing meals for multiple facilities, which is the way our operation continues to move." Metro's central kitchen currently provides about 600 meals a day for two facilities; the main building on its campus, as well as the Skilled East Nursing Wing. The kitchen will also provide meals for a new facility, "New West," which is scheduled to open later this year at Metro.

With the installation of equipment including a "food bank" for storage, which can keep products at 28°F. to 30°F., and cook-chill pieces including two 100-gallon kettles, two 500-pound combination cook-chill tanks and a blast chiller, the production segment of the renovation project was fully in place by mid-1998. Then, menu items could be prepared, chilled rapidly (Metro's cook-chill system can take food from 180°F. to below 40°F. in 30 to 45 minutes), stored safely and then served conventionally to patients. But the new equipment system could not solve the No. 1 complaint from patients of the medical center's foodservice — warm milk! Foutty said that after the initial equipment installation, he and his team were then ready for the next step in modernizing dining operations at the medical center: the improvement of food delivery systems. He and his team worked through mid-1998 and into 1999 researching various systems, until they were satisfied that they had put together a methodology that would work safely and

Long Beach Unified School District's Nutrition Center



Floorplan (above) of the production area at the Long Beach Unified School District's Nutrition Center illustrates flow of food from delivery docks adjacent to freezers, into coolers prior to preparation of menu items in the production kitchen. Production kitchen includes six 200-gallon kettles and two jumbo chillers for cook-chill production of recipes.

efficiently for them.

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One challenge that was faced by the dining operations staff at Metro was the absence of air conditioning in the main kitchen. Foutty said, "We worried about plating patient meals in the heat of our kitchen during the summer. How could we keep the food safe and maintain HACCP temperature safety guidelines when we had no control over kitchen temperatures?" A solution to this dilemma presented itself during a summer visit to a facility in Canada, where Foutty saw a "cold room" being used as a site for the patient tray line. In 1999, a cold room was added in the central production kitchen at Metro, where temperatures now remain around 59°F., providing a climate-controlled atmosphere for the plating of menu items for patient trays. Cold items are kept at under 40°F. by the additional use in the cold room of a refrigerated make-up table equipped with refrigerated compartments underneath that hold foods being plated.



Food bank at Metro Medical Center in Cleveland holds products at 34°F. and is part of a 40' X 80' refrigerator with three temperature zones.

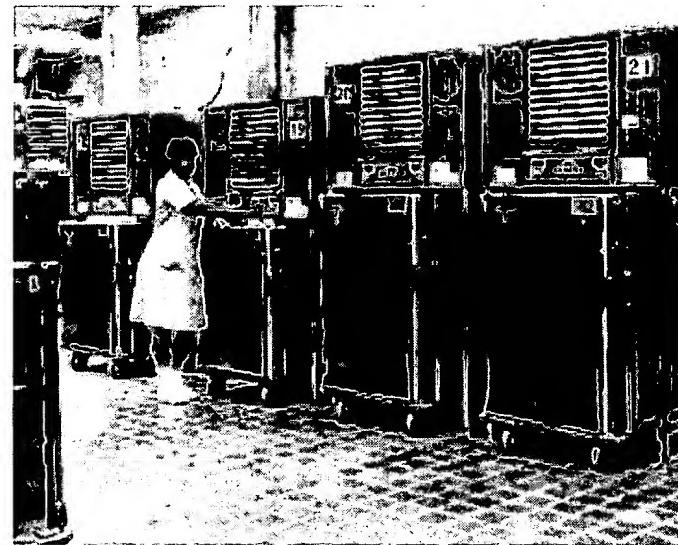
As trays are completed, they are loaded onto racks which "dock" into temperature-controlled holding units where they are kept until delivery to patients. These docking holding pieces have helped improve HACCP compliance by maintaining safe temperature controls as meals flow from preparation to patients, according to Foutty. The docking equipment's temperature controls are

monitored electronically and keep trays chilled at 30°F. Foods to be rethermed are stored on one side of carts in the docking stations, which can be programmed to heat those items at the appropriate time before service to patients. The specific

temperature control of trays has also solved Foutty's No.1 frustration with patient meals, as patients are now served cold milk. Foutty said that by early next year, he hopes to have an on-line computer added to these docking units that will provide the ability to control, monitor and record temperatures of trays via a modem linked to a PC.

Foutty added that the renovation to the medical center's central kitchen, and especially the change in production to a cook-chill system, not only provided an efficient method of satelliting meals to

multiple facilities, but also engendered a system that supports peace of mind through its built-in HACCP compliant features. He concluded, "It is a comforting feeling, knowing that we can virtually eliminate the potential for foodborne illness in our operations. There is nothing worse for a foodservice, be it institutional or commercial, than to have an incident of sickness caused by food it has served. It can completely destroy your reputation, and that's something you can never get back."



Patient tray carts hold foods at below 40°F. when docked into temperature control modules.

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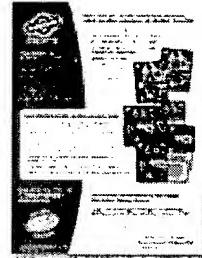
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